

Elephants and Blindness

Fodder for the Air Warrior's/Scholar's Professional Reading on the Gulf War

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In every country where man is free to think and to speak, differences of opinion will arise from differences of perception, and the imperfection of reason; but these differences when permitted, as in this happy country, to purify themselves by free discussion, are but as passing clouds overspreading our land transiently and leaving our horizon more bright and serene.

—Thomas Jefferson to
Benjamin Waring, 1801

THE SAME IDEA conveyed in the epigraph has been variously attributed to Jefferson and Indian philosophy as a fable involving seven blind men and an elephant. All of the men examine the huge creature, and each relates a different perception of the truth. One sees it as a snake, another as a wall, a third as a tree trunk, and so forth. All are right—and all are wrong. What are seekers of truth to do? They can only search out as many of the views of blind

men and weigh each into a composite picture of reality. So it has been with the Gulf War; so it is soon to be with the Kosovo War. The aim herein is to help the Air Force warrior/scholar enhance his or her vision of what is real in air war.

This article seeks to render a fuller description of the elephant by providing an overview of the Gulf War's historical background and then examining the deployment and combat phases of the war, the latter objective aided largely through a review of *Shield and Sword: The United States Navy and the Persian Gulf War*, an important new book by Edward Marolda and Robert Schneller Jr.¹ As noted in earlier articles in my "Fodder" series, the authors draw their inspiration in large part from the work of one of America's greatest military educators, the late Col Roger Nye of the US Army, whose book *The Challenge of Command* every warrior/scholar should know.² At the end of each of that book's chapters, Nye offers a list of 10 books

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on the subject, recommending two for openers and eight more for depth and mastery. Following that pattern, I close with a sampler

of 10 books on the Gulf War that may help you with your own professional reading program.

A Shoestring Primer on the Gulf War

Ancient Times

Sophisticated civilizations were developed in what is now Iraq, Iran, and Egypt four thousand years before Christ—which causes many people from that region to look upon confident Americans as arrogant Johnny-come-latelies.

Modernity

Western civilization got its start much later and for a long time was enshrouded in backwardness. By the nineteenth century, however, it had passed the older cultures, especially in military technology. This enabled it to start a new wave of imperialism that imposed European rule over much of the Middle East and Africa in that century.

World War I

The Great War was a turning point in imperial history in many ways. The great Russian, German, and Habsburg empires collapsed, but the winners were really the prime colonial powers. However, they were so severely weakened by that war that they never were able to recover their former greatness, although Britain and France temporarily gained League of Nations mandates in the Middle East.

Internal Combustion Engines and Oil

An energy revolution started with the development of internal combustion engines earlier, but the massive interwar conversion of ships, land vehicles, and home heating to oil greatly increased the strategic importance of the Middle East.

World War II

This world war completed the process of setting the great French and British colonial empires on the road to oblivion. It also marked the transition of the United States from the first of the colonial powers to have broken away to the main champion of the fading imperialists—and thus it became an enemy of the Third World.

Palestine and Israel

Creation of the Israeli state soon after World War II further weakened the US position in the Middle East. We became the only guarantor of the survival of the Jewish state on land that, for many years, had belonged to the Palestinians. The United States, therefore, became the great Satan, not only to the Arabs but also to the whole world of Islam.

British Withdrawal

US security had long depended in part on the relationship of the United States with Great Britain. That began to weaken soon after World War II, when a lack of resources no longer permitted the British to maintain stability in the world between Singapore and Gibraltar. Gradually, the United States began to assume part of that role.

Nixon Doctrine

America further alienated large parts of the anticolonial world in its assumption of the French role in Vietnam, really as a part of its containment policy. But the Third World did not see it that way, and the American defeat in Vietnam led to a new policy whereby the United States would supply the sea power, airpower, and some economic power, but local counterrevolutionaries would have to fight their own war on the ground.

Fall of the Shah

The first test of the Nixon Doctrine failed because Iran, the pillar of the Persian Gulf region, collapsed to an Islamic fundamentalist revolution. The Shah fled his homeland and died in exile.

The Soviets, Afghanistan, and the Horn

For a time after Vietnam, there had been a period of détente in the cold war, but it disappeared in the late 1970s. The Russians got into their war in Afghanistan, and it was not immediately clear that they would lose it. Too, they were soon promoting instability in noncontiguous areas like the Horn of Africa, and that seemed to flank the Persian Gulf's oil lifeline on both sides.

Iran-Iraq War

After the Shah, Saddam Hussein grasped the opportunity that he thought arose from the instability, starting a war with Iran that lasted for most of the 1980s. Although he won, he was drastically weakened from the long fight. The United States, alienated from Iran by the seizure of its embassy there, slightly tilted toward Iraq in that war but did so with restraint because Saddam remained a Soviet client.

Osirak Reactor

Saddam had showed himself capable of using weapons of mass destruction (WMD) by attacking his own people with chemical weapons. Because the Israelis could not tolerate the nuclear development program he had undertaken, they launched a preemptive air attack on the facilities of Osirak in 1981 that set back his effort but did not kill it.

Invasion of Kuwait

Early in August 1990, Saddam attempted to restore his economy by taking over Kuwait, asserting that it was only a province of Iraq. This diminished the already tenuous stability of the Gulf region, and most observers saw this aggression as an intermediate step toward taking over Saudi Arabia, a rich country that nevertheless lacked the human resources to offer much military resistance to Saddam's army.

The Gulf War: Deployment and Combat

Permitting Saddam to dominate Gulf oil would have amounted to giving him dictatorial powers over the developed world. The entire world economy depended heavily on Gulf oil, especially that of the NATO allies and Japan, so the United States immediately decided to take military action. Although the first requirement called for setting up a credible defense, US forces had to deploy halfway around the world. Inexplicably, Saddam permitted the United States several months to assemble a coalition and deploy overwhelming force to the region.

The coalition's offensive against Iraq did not launch until after the onset of 1991, and then it included an air-only phase that lasted several weeks. The air campaign began with a strategic attack at the center of Iraqi power, seeking to achieve air superiority, undermine Iraqi command and control (C²), and neutralize Saddam's WMD capabilities. The abundance of airpower permitted an almost simultaneous conduct of the later phases, which sought to gain control of the air over Kuwait and then prepare the battlefield. That done, the ground war commenced with a turning movement around Iraq's western flank, and airpower then began to support the ground operation, which lasted four days.

Outcomes and Implications

The coalition quickly attained all of its declared objectives at a very low cost in casualties and with minimal collateral damage to Iraqi civilians. Space capabilities, information assets, and precision-weapons technology received high marks, as did airlift, air refueling, and transportation systems. Many people thought that the experience implied that, in the future, air forces would increasingly become the supported elements while ground and sea forces would provide support.

Overview

Doubtless, what appears to Islamics as arrogance—our presumption of cultural superiority—tends to make Americans unwelcome in the lands surrounding the Persian Gulf. In part, this attitude arises from the Islamics' knowledge that civilization had its origins in the region—in Mesopotamia. For thousands of years before Christian white Europeans discovered America, culture and science had developed and advanced in Persia and the area now known as Iraq—and in the lands now occupied by Egypt as well.

Modernity

Western civilization got its start many centuries later in Greece and then in Rome, but after the fall of the latter, it receded into the Dark Ages and a partial return to barbarianism. Meanwhile, the intellectual development that had occurred in Greece and Rome was largely preserved in the Arabic lands to the south. In large part it returned to Europe through the Iberian Peninsula when Moors ruled that area (until the fifteenth century). But the West had bypassed the older civilizations in military technology—at least by the middle of the nineteenth century. In the latter decades of that era, such advances enabled a new wave of Western imperialism to penetrate the lands of North Africa and the Middle East, and on into the regions of the Persian Gulf and beyond. Through most of the early modern period, the Americas themselves became objects for imperialism, none of them advanced enough to participate much in the new imperialism of the late nineteenth century. Well past this period, colonial peoples widely deemed the United States the first colony to successfully break away from archimperialist Britain; thus it became an American model for the rest.

World War I

In many ways, World War I represented the great divide; for example, it marked the beginning of the end for the great colonial em-

pires. Actually, both Spain and Portugal had long ago lost most of their colonies. Now, the Habsburgs in Austria-Hungary and the Romanovs in Imperial Russia came to ruin. So, too, did Germany, a newcomer to the imperial race. Fighting had occurred in both Mesopotamia and Palestine, and France and Great Britain inherited some of the colonies of Africa and the Middle East under the disguise of League of Nations mandates. However, the French and English had suffered such grievous wounds in the war that they had little chance to rise again to their imperial greatness. Although the United States had acquired a mini-empire in the Pacific and Latin America and had clearly emerged as a great power, the Islamic lands of Africa and the Middle East had not yet deemed it the Great Imperial Monster.

Internal Combustion Engines and Oil

One of the reasons that America had not yet become the great Satan for Arabs and Persians was that it had largely left that region of the world to the British and French. Even with the coming of the internal combustion engine, oil-fired fleets, and the discovery of the great oil deposits of those regions, American involvement remained minimal to the east of the shores of Tripoli. We had ample domestic petroleum resources for our own needs and even for export. The US Navy did show the flag in the Persian Gulf, even in the nineteenth century, but the United States had no vital interests there. However, as the interwar period progressed, the great navies of the world completely converted from coal to oil, as did the heating systems of the world's great cities.

World War II

This war pounded the final nails into the coffin of Western imperialism and marked the time when much of the Third World came to look upon the United States as the Satan who would prevent decolonization. We were still self-sufficient in oil, but when we joined the British and Free French in the North African

campaign, many non-Europeans came to view the United States as the soul of imperialism. In Asia, the initial great triumphs of the Japanese over the Europeans and Americans made a profound impression: the white man *was* beatable. On top of that, the mechanization of ground war and the coming of air war both increased the demand for petroleum, and both Hitler's and Japan's great overextensions originated in their lust for the oil of the Caucasus and the East Indies.

As the war went on, US involvement in the Gulf region increased in another way. Because of the desperate need to keep Russia in the war, lend-lease aid would have to get through. One route for that lay northwards through Persia, so that at the end of the war, the USSR occupied the upper third and the Western allies the southern two-thirds of Iran. Just after the war, the United States left the region and tried to pressure the Soviets to do likewise, but the whole experience did little for our former anticolonialist image. Nor did it help that President Harry Truman reversed President Franklin Roosevelt's policy toward the French recolonization of Vietnam. As the price for French support of containment in Europe, he aided them in getting back to Indochina and in hanging on in Algeria.

Palestine and Israel

The largest downturn in American relations with the whole world of Islam began with the creation of the Israeli state in 1948. Dating from Truman's immediate support of the new nation, the United States has consistently rendered crucial aid in Israel's many wars against the Arabs. Although we were not yet dependent upon Gulf oil, our NATO allies were increasingly so. Notwithstanding subsequent discoveries of oil deposits in the North Sea and on the Alaskan North Slope, demand for oil had increased, and the United States transitioned from oil exporter to importer. The problem has increasingly become one of squaring the circle of assuring the flow of oil to the West while preserving the security of the Jewish state against prevailing Islamic hostility.

British Withdrawal

Ever since President James Monroe issued his famous doctrine in 1821, a special relationship has existed between the United States and Great Britain. Insofar as that doctrine had any impact at all in stemming European imperialism in the New World, it depended on the British fleet—not the US Navy. After the *Alabama* claims were settled in the 1870s and after the great British-American rapprochement of the 1890s, the relationship became tighter than ever, yielding important payoffs for both sides. One of the benefits for the Americans was that the British preserved stability and to a substantial extent supported US interests in the regions from Singapore to Suez. However, the toll of the two world wars and the loss of empire so weakened the British that they simply could not sustain a major presence east of Suez much past the end of World War II. They stated as much to President Truman. To some extent, he led the United States in fulfilling that role by establishing the Sixth Fleet in the Mediterranean and sustaining a minor Navy presence in the Persian Gulf itself.

Meanwhile, the oil factor became ever more important, and basing for the Navy's small Middle East force in the region became ever more tenuous—hence, the need for alternative basing in the region. In the 1960s, the United States had acquired rights from the British for a communications station at a tiny atoll called Diego Garcia in the Indian Ocean. By the late 1970s, we had developed it into a naval and air base although it still was a long way from the Persian Gulf.

Nixon Doctrine

One of the legacies of the Vietnam War was the scarcity of way stations for air and maritime forces. Those in Southeast Asia were gone—in fact, the USSR occupied the great base at Cam Ranh Bay. Hong Kong seemed destined for Chinese Communist rule; World War II had demonstrated the vulnerability of Singapore; the United States was asked to leave Thailand not long after its humiliation



Photo courtesy of Dr. James Young, Air Force Flight Test Center

Marolda and Schneller show that the vast bulk of materiel for the Gulf War came by sea. But strategic airlift, especially by C-5s and C141s, made a huge difference in the early part of the deployment. The Air Force built the C-17, shown here, to replace the C-141; by the time of the Kosovo War, it had become the mainstay of the strategic airlift fleet.

in Vietnam; and US tenure in the Philippines was coming to an end.

Another such legacy entailed a stout American aversion to any notion of prolonged land combat in Asia or elsewhere. So what came to be called the Nixon Doctrine asserted that the local peoples themselves would have to use their own troops to fight off Communist external and internal aggression. The United States would only assist them with its naval forces, airpower, and economic power.

Fall of the Shah

Insofar as the Persian Gulf was concerned, everything hinged on Iran, led by its Shah. But this local pillar of the doctrine proved unstable. In 1979, the ayatollahs carried off a fundamentalist revolution in Iran, and the Shah fled, never to return. The oil embargo associated with the Yom Kippur War of 1973 administered a severe shock to the world economy, and in 1979 this new instability in the Gulf threatened a renewal of trouble. The United States had the airpower, sea power, and economic muscle—but had no regional

protégé who could hold the line on the ground.

The Soviets, Afghanistan, and the Horn

Among the great inhibitors for the United States during both the Korean War and the Vietnam War was the fear of escalation to all-out nuclear conflict between the superpowers. That, as much as anything else, explains the failure of Operation Rolling Thunder. But both Secretary of State Henry Kissinger and President Richard Nixon visited the People's Republic of China in 1972 and also concluded the first great arms-control agreement with the Soviets in June of that year. Those things accounted for the greater vigor in Operation Linebacker than had been the case in the earlier air campaigns. The ensuing half decade of détente suggested that world peace was indeed at hand.

But it was a false dawn. At the end of the 1970s, trouble started again. The Soviets demonstrated a new aggressiveness in places they had never been before, such as Afghanistan—and no one could immediately tell whether the outcome there would resem-

ble the one in Vietnam. More serious was the Soviets' new participation in noncontiguous regions—on the Horn of Africa and in support of the insurgency in faraway Angola. These moves seemed to flank the Gulf region on both sides and raised fear in the West that the Communists would soon be able to choke off the flow of oil—so much so, in fact, that President Jimmy Carter, not much given to saber rattling, nevertheless warned that oil constituted a vital interest to the United States and, therefore, a *casus belli* (cause for war).

This situation led to creation of the Rapid Deployment Force, which ultimately evolved into US Central Command, and to an increase in defense spending after the post-Vietnam drawdown. Furthermore, the United States persuaded its NATO allies to increase spending and to accept the deployment of ground launched cruise missiles on their territories. But all that did not help much because the Iranians still felt capable of grabbing the United States Embassy and imprisoning its people. The apparent helplessness of the United States and the failure of the Iranian rescue mission led to Carter's defeat in the election of 1980, among other things. His successor, Ronald Reagan, came on with a platform of rearmament and restored assertiveness in foreign policy.

Iran-Iraq War

The endless agony of the Iran-Iraq war of the 1980s posed a real dilemma for the United States, whose long-standing policy called for promoting stability in that region (and others) and doing so while limiting the risks and costs involved. But this was a case of trying to choose between the devil and the deep blue sea. Clearly enough, Saddam was the aggressor, and Iraq had long been a client of the USSR during the cold war. But the pain inflicted on America by the ayatollahs was recent, and their hostility plain enough. The war destabilized the Gulf; Iran and Iraq knew that the oil line through it was a tender nerve for the West and for Japan and that they could cause a reaction by threatening it. No

one foresaw the impending fall of the USSR, and the old inhibitions of the cold war afflicted the ability of the West to stabilize the situation. The fighting impoverished both sides, notwithstanding their oil wealth, portending additional trouble to come. In the end, the United States could do no more than "lean" toward Iraq a bit, albeit uncomfortably. Iraq won but realized no significant gains, emerging from the war in bad shape.

Osirak Reactor

Meanwhile, the threat of instability in the Gulf had become drastically more menacing with the Iraqi attempt to develop a nuclear capability. Though the Israeli air force made a spectacular attack on the Osirak reactor at Al-Tuwaitha in June of 1981, the program continued. During Saddam's war with Iran, he demonstrated his willingness to use WMD by repeated attacks with chemical bombs and shells.

Invasion of Kuwait

The story about the Iraqi invasion of Kuwait has been told so many times that there is little need to dwell on it here. Saddam's army crossed the border in early August, and tiny Kuwait had no chance to slow it down. Nor were Saudi Arabia's chances much better because of its sparse population. At the time, no one in the West had any idea where the Iraqi force would halt. Saddam's declared grievances included a claim that the Kuwaitis were stealing from him by pumping crude oil underground from his side of the border. In any case, he also proclaimed that Kuwait merely constituted one more province of Iraq. Because Saddam had funded his long war with Iran through loans from the other Arab states, his economy was in bad shape. For that reason, he had attempted to persuade Kuwait and the others to forgive some or all of those debts, but they were not so inclined. Like the Japanese and Vietnamese before him, he assumed that the West—the United States in particular—had no stomach for bloody ground fighting and made no secret that he

would use that to get his way. But the threat implied to the West was enormous. As President Carter had proclaimed, the oil of the region was so central to the world economy that if Saddam gained control of the Arabian Peninsula, he would then be able to dictate terms to everyone—a daunting prospect. So the first problem for the West entailed throwing together a defense that could halt the Iraqi onslaught before it rolled much further south.

The Gulf War: Deployment and Combat

Doubtless, history will record that the diplomatic and logistical effort that so quickly put a barrier in Saddam's path was one of the greatest of the twentieth century. Code-named Operation Desert Shield, many writers have described it in publications readily available to the readers of this journal—the *Gulf War Air Power Survey*, for example. But a fine, new official history will give the Air Force reader an excellent perspective from the viewpoint of a sister service—the US Navy. In *Shield and Sword: The United States Navy and the Persian Gulf War*, Edward J. Marolda and Robert J. Schneller Jr. have provided a seminal work on the conflict. They show that the sea service made a vital and very substantial contribution toward halting and then reversing the Iraqi aggression. Further, they make clear that the operation involved more than just adding another air force to the air war and that without the rest of the Navy's contribution, the campaign would not have succeeded.

It is hard to imagine two authors better qualified to write such a volume than Marolda and Schneller. A Vietnam veteran of the US Army, Dr. Marolda has a master's degree from Georgetown University and received a doctorate from George Washington University after writing a dissertation about the US Navy and the Chinese civil war from 1945 to 1952. He is widely published on the Vietnam War and clearly has a good understanding of both naval and air operations. Marolda now serves as senior historian at the

Naval Historical Center at the Washington Navy Yard, his home for more than a quarter century. His collaborator, Dr. Schneller, who earned his doctorate at Duke University, first arrived at the Navy Yard at the time of the Gulf War and has worked there ever since. One of his many naval writings is a biography of Adm John Dahlgren.

Although one might reasonably expect to find a pro-Navy bias in *Shield and Sword*, the book is far less partisan than many others that have appeared in the wake of the Vietnam and Gulf Wars. To their credit, the authors give full treatment to the Navy's warts in the Gulf War, providing a sound basis for both understanding and reform where needed. Their excellent methodology results in comprehensive coverage of the important secondary sources and ample usage of primary sources—not at all limited to naval materials found in their local archives. Too, the authors make sound and extensive use of interviews of the principal naval actors, many of which they conducted themselves. The superb writing style and editing make the book a pleasure to read—unusual for an official history.

As the title suggests, *Shield and Sword* consists of two parts: getting there and then conducting the war. The first part, three chapters in length, makes it clear—more so than some Air Force literature—that no one could have known that Saddam would elect not to continue his march into Saudi Arabia. Thus, it becomes altogether too easy to assume that it could not happen and that defensive measures amounted to nothing, serving only to delay the coalition offensive. But the deployment was a massive and complex operation, involving much more than just airlift. Already the United States had reduced its forward presence substantially in reaction to the end of the cold war, but the constitution of one of our maritime pre-positioning forces based on Diego Garcia eased the logistical problem somewhat. Also, US Marine amphibious forces afloat had enough logistics support with them to sustain themselves ashore for a short while. Nevertheless, the operation still



Photo courtesy of NATO

NATO countermine vessels. Marolda and Schneller suggest that the Navy has long neglected mine countermeasures, a deficit that showed up in the Gulf War when we found that several of our coalition partners were more advanced in countermine technology and tactics. Iraqi mines seriously damaged the USS Tripoli and USS Princeton; without the countermeasures capability of our allies, it might have been much worse.

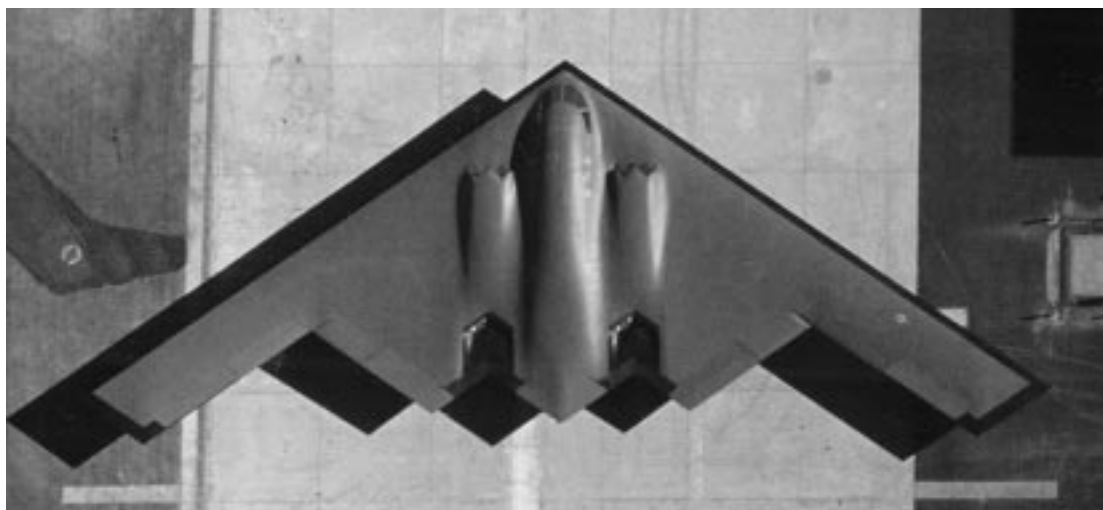
required substantial sea lift, directly from the United States.

By the end of the first week in August 1990, two aircraft carriers, the USS *Independence* and the USS *Eisenhower*, were close enough to the region to lend support ashore and help defend inbound airlift, if that became necessary. Despite delays in departure, some of the maritime pre-positioning ships were steaming inbound to the Gulf before the middle of August. As Marolda and Schneller point out, Air Force units with ordnance aboard arrived early at well-prepared bases. But all of their weapons were air-to-air missiles and guns; most of the really heavy air-to-ground bombs required sea transport. Because air defenses had to go up first, followed by ground defenses, the heavy weapons for the offensive had to wait.

Some maritime forces threatened this orderly development, however. The Iraqi air force, for example, had demonstrated its air-to-surface capability some time before the war when it hit the USS *Stark* with Exocet missiles. Iraq also had some small naval units that could have caused disproportionate disruption

had they infiltrated the logistical and amphibious units or even the vessels protecting them. Too, one of the warts that Marolda and Schneller deal with frankly and at length is the inadequacy of the US countermine force and associated doctrine. Although mines cramped operations and caused some losses, on the whole, we overcame the problems of Desert Shield without undue strain.

Another of the challenges for the Navy that *Shield and Sword* deals with frankly is the defectiveness of the C² system insofar as it related to integrating naval operations with the rest of the joint force. The authors admit that cultural inhibitions as well as the normal frictions of war disrupted the smooth development of joint C². The Navy was more or less left to its own devices for the control of over-water operations, but its flying over land had to be centrally controlled by the joint force air component commander (JFACC), if for no other reason than for the sake of flying safety and deconfliction. This meant that nothing could fly over land unless it was listed on the daily air tasking order (ATO). Although the Goldwater-Nichols Department of



One of the most discussed and "cussed" Air Force aircraft in history, the B-2 did not participate in Desert Storm but proved instrumental in the Kosovo campaign of 1999. It was the only weapons system equipped to drop the joint direct-attack munition (JDAM), capable of going through clouds and hitting targets with 10–15 meter accuracy. No other precision free-fall weapon or missile could operate in cloudy or foggy conditions. Cruise missiles, however, can operate in a wide variety of weather conditions, although they are more expensive than JDAMs or joint standoff weapons (JSOW).

Defense Reorganization Act covering this had been imbedded in the law for five years, the Navy's seaborne hardware and software still lacked compatibility with those of the rest of the joint force. Marolda and Schneller make clear that the culture of the service inhibited rapid reform before the war—naval officers, especially the aviators, typically thought the whole process too cumbersome and inflexible. However, the Gulf War experience tended to cause many of them to accept the inevitability of centralized C². But no easy solution existed for the short term, and the ATO could not be transmitted to the ships electronically; rather, aircraft ferried out a copy of the huge document every day.

Another puzzling complication in the control of naval forces was that the highest naval commanders, headquartered at sea away from the joint force commander, were very often transferred back to the United States during Desert Shield and Desert Storm. Apparently, the Navy's system did not permit the disruption of peacetime personnel routine for the sake of the war. Unhappily, this resulted in a tendency toward the disruption of

continuity, but that problem appears to have been overcome.

The sea lift itself included several elements. Some of the material came in on the pre-positioning ships that had been acquired since the days of President Carter. That worked fairly smoothly and was a godsend. Some of it came aboard some relatively new roll-on/roll-off fast ships acquired in recent years, and that worked quite well because those vessels proved reliable as well as fast, making many round-trips before the end of the war. Less reliable were some of the older ships kept in the reserve fleet for specified periods during which they could be made seaworthy to meet contingencies. But crews often missed these time lines, machinery proved unreliable, and in at least one case, the ship's propulsion broke down in the mid-Atlantic, and it had to be towed to port.

In other literature, many analysts have asserted that the Saddams of the world also learned lessons from the Gulf War and that they certainly would not allow the United States time for another great buildup. This has led the US Army to begin thinking that it

had to make itself lighter to get to future fights on time. The Kosovo experience of 1999 so reinforces this idea that it seems likely the ground arm will really take that notion seriously in the near future.³ Frictions arising from the reserve fleet in the Gulf War certainly support that notion. If indeed substantial reform does not take place in this area, it might have serious implications for the air warrior/scholar. The media has repeatedly expressed concerns about the danger of running out of precision-guided munitions (PGM) during the Kosovo War.⁴ The bulk of air munitions necessarily must come by sea. If that is not feasible, are we to become all the more dependent upon PGMs? Does that mean we need to give renewed attention to the size of the inventory? Does it also mean that we should give even greater attention to the development of, say, the "small smart bomb" for more than just the F-22? Does it mean that, even for B-52s, the day of the "dumb bomb" is nearing its end? Is the purchase of huge numbers of joint direct-attack munition kits and laser-guided-bomb seekers cheaper than maintaining a reserve fleet of ships that seldom move and cannot be made ready on schedule? We had plenty of international support in both the Gulf War and Kosovo. We had no difficulty in contracting foreign-flag shipping for trips to the Persian Gulf. Will it always be so? And not just the Army and Navy should have concerns about this.

Neither Marolda nor Schneller has had Air Force service, but they have an excellent grasp of the planning and operations processes of the land-based part of airpower. Although the Air Force warrior/scholar will find much familiar ground in the employment part of *Shield and Sword*, he or she will nevertheless find it interesting because the authors tell that story from a different perspective.

The Plan

Marolda and Schneller are conversant with the plan for Desert Storm but do not get into its development very deeply. They lay out the four phases in standard fashion, noting the

Navy's role in all of them. The fact that Navy technology and tactics for identifying enemy targets were not as developed as the Air Force's somewhat inhibited its air-to-air participation, a cause for some concern.

Naval Role

Although some Navy men have asserted that parochialism caused this problem, others saw the hazards of fratricide associated with limited identification capability. The Navy had six deck loads of airplanes on the scene for participation in the air campaign, and their distance from the targets caused some complications because of the air-refueling requirements (some of the carriers *were* sometimes closer to the targets than some of the more distant land bases). Here again, some Navy folks thought that the JFACC utilized the tanking capability at hand in a partisan way, but many others do not agree. The authors favor the latter interpretation in both cases.

The Navy also had on the scene a considerable number of Tomahawk land attack missiles (TLAM), which complemented the F-117 in an important way. The F-117 operated under the cover of darkness, so daylight would have compromised its stealthiness. The TLAMs, utilized in daytime, thus enabled the coalition to keep up the pressure in the high-threat environment over Baghdad around-the-clock. We fired 122 of them on the first day and 280 during the whole campaign; eventually, the Iraqis began to shoot some of them down. Then, according to the authors, Gen Colin Powell decided that the expense of the TLAMs made it inadvisable to fire any more of them.

Execution

Phase one principally aimed at bringing down the Iraqi air defense system (i.e., gaining air superiority). As Marolda and Schneller explain, when President George Bush decided to double the force in October, the preponderance of airpower assembled by January caused the first three phases (establishing



In Shield and Sword, Marolda and Schneller write about the Navy and therefore largely concern themselves with strategic transportation. In Every Man a Tiger, Tom Clancy and Gen Charles Horner describe the major in-theater logistical contribution made by C-130s, especially their tactical role in giving the Army's VIII Corps the mobility it needed to move around Saddam Hussein's right flank in a short time. The greater part of the C-130 fleet is now manned by Reserve components; the one in this photo belongs to the Colorado-based 731st Airlift Squadron of the Air Force Reserve.

air superiority and disrupting enemy C² by attacking strategic targets in Iraq; establishing air superiority in Kuwait; and preparing the battlefield) to merge. A single-seat F/A-18 appeared to be the coalition's first air-to-air loss, but, on the whole, the allies quickly achieved air superiority, inflicting major damage to the Iraqi C² system.

Arguably, ever since World War II, the Navy has led the way in the development of the suppression of enemy air defenses. For example, the Navy developed all of the missiles used for this purpose in Vietnam as well as the high-speed antiradiation missile, the principal lethal instrument in Desert Storm, although all the American air arms employed (and still employ) it. The Navy also had at the ready both towed and autonomous decoys, used to great effect by causing the Iraqis to waste many expensive surface-to-air missiles, which were in short supply.⁵ Both services had dedicated nonlethal means of defense sup-

pression in the air from the outset. In the Air Force's case, EF-111s—then still in the force structure—performed yeoman service. The Navy's counterpart, the EA-6B Prowler, provided jamming services for all coalition air forces and could deliver lethal weapons against defense sites.⁶ By so quickly achieving command of the air, the coalition could pursue all the other missions in the air and on the ground.

The anti-Scud-missile part of the campaign did not benefit the Iraqis much in terms of physical destruction achieved. Rather, as had been the case with the German V-1 campaign in 1944, its chief value lay in supplying a decoy that absorbed a large number of air sorties without much physical effect—although Marolda and Schneller do seem to agree with many other standard accounts that the political impact was important.

As noted, the abundance of airpower made it possible to execute the first three

phases simultaneously. Phase three, preparation of the battlefield, absorbed the greatest part of the Navy's attention, one dimension of which entailed posing the threat of an amphibious landing on Saddam's left flank. The idea was to pin down his forces there, far away from the main attack—an end run around his right flank, the famous “left hook.” This part of *Shield and Sword* is especially informative to Air Force readers.

The landing proved much more complicated than one might think. For example, the Navy had to remove mines even though it was only a feint, and the Kuwaitis were concerned that any landing on that coast would destroy much of the built-up property there. The authors seem thoroughly persuaded that the enemy took the amphibious threat seriously; indeed, major Iraqi formations undoubtedly remained along that coast. Some might wonder whether those units would have moved even in the absence of the feint. The ground war lasted only four days, a short time for a ragtag conscript army to build enough momentum for a complete change of front and move west to help meet the threat posed on that flank. (Keep in mind that we still marvel at Third Army's swift change of front in 1944 in response to the Ardennes Offensive. But the Iraqi conscripts were not Third Army, and Saddam Hussein was not George Patton.) Moreover, the same folks were in pretty bad shape as a result of the rigors of their war with Iran and the deprivations suffered during the air war. Marolda and Schneller cite an instance whereby some Iraqis attempted to surrender to an unmanned aerial vehicle (UAV)! In any event, the joint force commander decided against executing an amphibious attack; there was to be no Inchon this time.

One of the reasons that Iraqi formations in Kuwait might not have been able to move was the effect of the interdiction part of the battlefield-preparation phase, in which naval aviators played a significant role. For all the Iraqi attempts to work around the breaks in their transportation system, troops at the front were greatly weakened for the want of food

and water. They simply did not put up much of a fight.

Naval air put even more sorties into “kill boxes,” the result of the JFACC's dividing the battlefield into a number of squares. Airpower was so abundant that he adopted a “push” kind of operation that probably would have horrified his predecessors long ago in the African campaign of 1942–43. Coalition air forces would launch strikes on a regular basis without having any special requests from the ground forces. When aviators arrived at their assigned boxes, they checked in with the controllers, who would then assign them to a particular target on the ground—if one existed. If not, the airman proceeded into his box on a kind of armed reconnaissance mission to kill whatever target he came upon. According to *Shield and Sword*, Gen Charles Horner and the rest of the Air Force were determined not to do anything that resembled the assignment of route packages in Vietnam (assigning permanent geographic areas to a particular service for attack). Consequently, planners changed the boxes assigned to the Navy on a daily basis.

But things were different in 1943 in Africa and the Solomon Islands. Marolda and Schneller note that Adm John LaPlante, a surface sailor, grumped that the naval aviators dominating the staffs were so preoccupied with competing with the Air Force that they neglected his concerns about the Iraqi threat to his forces afloat (p. 255). So it goes in combat where our back is not against the wall. In Africa and the Solomons, defeat—even annihilation—was a real possibility. According to Adm James Winnefeld and Dr. Dana Johnson, that is the one thing which has sometimes, although rarely, suppressed service rivalry even during battle.⁷

The Navy also helped prepare the battlefield in another way—old-fashioned shore bombardment from the Gulf. The authors generally agree with most Air Force sources that one of the most serious difficulties in the war entailed getting feedback on the effects of one's attack. That had also been a problem for battleships from the earliest days of the

twentieth century, when the ranges of their great guns first began to exceed the distance to the visual horizon.

The fact that airplanes greatly enhanced the value of battleship guns by spotting the fall of shot made the fight over aviation so passionate in the 1920s—some aviators thought that airplanes should drop the shot themselves. By the time of the Gulf War, battleships had a new twist: UAVs. Now, they could send these vehicles into the target area with their television sets and data links so that the ship could get a close-up view of the damage inflicted—and get it immediately and without risking an aircrew. But it was not a free ride for them or the other surface ships offshore because mines posed a threat. The amphibious carrier *Tripoli* and the cruiser *Princeton* both suffered severe damage from Saddam's mines. Too, mines inhibited operations in other ways, in that they slowed combat operations and forced ships to stand further offshore than they might have liked. Still, the old battleships delivered heavy projectiles with very good accuracy as far inland as they could reach.⁸

Outcomes and Implications

One notes plenty of carping in the media and academia that the coalition cannot claim victory in the Gulf War. The argument depends on imagining some undeclared objectives and then asserting that we did not achieve them. Not so with Marolda and Schneller, who say that we not only achieved our declared objectives but did so with minimal losses. They claim that the Navy quickly learned more about operating as a part of a joint force. Further, they readily recognize defects in the institution (although seldom in the leadership) and note the beginnings of reforms to overcome them. Finally, they assert most strongly that the coalition achieved a *combined arms* victory and that the cost would have been much higher had we fought in any other way. The experience helped the Navy move from its old cold war mind-set to a new

attitude more suited to the problems of the twenty-first century.

All told, then, *Shield and Sword* deserves a very high place on the air warrior's/scholar's reading list. Writing in a very readable style, Marolda and Schneller have thoroughly and soundly researched the main secondary and primary sources and generally manage to contain their institutional bias. The book is especially valuable to Air Force readers in that it covers a familiar story and will help them understand a sister service. They will find the elephant described in a way somewhat different from their own definition, and in that difference lies the road to understanding, as well as ever more effective joint operations.

Most authorities associated with the ground and sea forces, plus a number with airpower leanings, make a very big thing about the uniqueness of the Gulf War. Who can deny it? But all wars are unique, and to avoid studying them on that account would deny the value of scholarship altogether. No doubt the scope of the war was limited in time and geography, but it is the most recent documented war that we have. World War II had a much wider scope in time and geography, but technology and even culture have now changed so much that its value as an object of study has diminished considerably.⁹ History is some combination of continuity and change. We have already seen some of the experience of the Gulf War repeated in Kosovo, yet some things have happened in Kosovo that are quite different from our experience in Iraq.

Even the elephant examined by someone with keen eyesight has changed from the day of the mammoth, but it is still big and has tusks. The task for air warriors/scholars is to estimate what will have continuing relevance and what was peculiar to the Gulf War (or any war they study). To do this, they must rely on the testimony of a host of blind men, most of whom yield a partial truth. If warriors/scholars rely on just one of them, more than likely the picture of the elephant will prove very defective. If warriors/scholars gather the visions of as many blind men as possible, they will im-

prove the odds that the view of the elephant will be close to reality—but no one can guarantee its accuracy.

When our air warriors'/scholars' moment of truth comes, our hope is that their worldview more closely approximates the real elephant than that of the adversary. All of us must hope that our defenders understand the uncertainty of war to the extent that they can build an organization able to adapt to the inaccuracies of the vision as revealed by combat—and to adapt more rapidly than can our enemies.¹⁰ Finally, the Air Force is well en-

dowed with disciples of joint operations and the synergies they can bring to war. By now, the latter-day Douhets are scarce. Clearly, General Horner (among many others in the Air Force), the JFACC in the Gulf War, understands that some circumstances dictate that Marine and Navy leaders retain control of their own air assets. Some of them, it seems to me, have yet to take the advice of Admiral Winnefeld and Dr. Johnson that in some cases, even if rarely, "all must realize that an air-only operation is a valid force employment option."¹¹

A 10-Book Sampler on the Gulf War: Works for the Air Warrior's/ Scholar's Professional Development*

Two for the Baseline

Revolution in Warfare? Air Power in the Persian Gulf by Thomas A. Keaney and Eliot A. Cohen.
Annapolis: Naval Institute Press, 1995.

Written by a leading warrior-scholar at National Defense University and a distinguished professor from Johns Hopkins University, this authoritative book should be the first on your list.

Shield and Sword: The United States Navy and the Persian Gulf War by Edward J. Marolda and Robert J. Schneller Jr. Washington, D.C.: Naval Historical Center, 1998.

This work by two leading naval historians is about as competent as official history gets. If you read only two books on the subject, make this the second one.

Eight for More Detailed Understanding

Guardians of the Gulf: A History of America's Expanding Role in the Persian Gulf, 1833–1992 by Michael A. Palmer. New York: Free Press, 1992.

This work is an excellent starting point, providing an authoritative historical background and adding a treatment of the Gulf War in relatively dispassionate terms, although heavily dependent on interviews. The author, now a professor at East Carolina University, has substantial experience as an official US Navy historian and is one of the leading naval historians in America.

The Generals' War: The Inside Story of the Conflict in the Gulf by Michael R. Gordon and Bernard E. Trainor. Boston: Little, Brown, 1995.

Written with great authority and in relatively dispassionate terms by a *New York Times* military correspondent and an experienced warrior, the book is necessarily based largely on interviews.

*This sampler is not intended as a definitive bibliography for experts. Rather, it is only a listing of readily available books that will introduce serving officers to the subject with sufficient detail to provide a conceptual framework on which to build. Hopefully, it will give them some idea of the varieties of interpretations that our "blind men" have contrived.

Crusade: The Untold Story of the Persian Gulf War by Rick Atkinson. Boston: Houghton Mifflin, 1993.

Atkinson, a Pulitzer Prize-winning author and journalist, did his homework and produced one of the most readable and best of the early books on the war. He presents a balanced story, gives airpower and diplomacy their due, warns that the experience would likely be hard to repeat, and does it all in a fine writing style.

Storm over Iraq: Air Power and the Gulf War by Richard P. Hallion. Washington, D.C.: Smithsonian Institution Press, 1992.

For a long time an official Air Force historian, Hallion was one of the first on the postwar market with a book on the Gulf War. *Storm over Iraq* is a readable work that gives many of the technical and tactical details in understandable form, but some readers complain that it unduly favors the Air Force view.

Every Man a Tiger by Tom Clancy with Chuck Horner. New York: G. P. Putnam's Sons, 1999. The Gulf War air commander tells his story with vigor in the Tom Clancy style—an easy and interesting read. Horner's bias in favor of fighter pilots, Tactical Air Command, and airpower in general is clear. But he is no zealot and can see the virtues of jointness and coalition warfare.

Heart of the Storm: The Genesis of the Air Campaign against Iraq by Col Richard T. Reynolds. Maxwell AFB, Ala.: Air University Press, 1995.

Heart of the Storm was written by an Air Force officer, more a weapons controller/operator than a scholar, with a clear bias in favor of airpower and especially partisan to Col John Warden's role in planning the campaign. The book features an unusual but readable writing style that is rare for an official publication.

Thunder and Lightning: Desert Storm and the Airpower Debates by Col Edward C. Mann III. Maxwell AFB, Ala.: Air University Press, 1995.

A career Air Force officer with a good writing style and technical understanding produced this book—perhaps biased in favor of strategic attack and the ideas of Col John Warden.

Lucky War: Third Army in Desert Storm by Richard M. Swain. Fort Leavenworth, Kans.: US Army Command and General Staff College Press, 1994.

Written by an articulate Army colonel in a balanced, elegant style, *Lucky War* focuses on the ground operation but pays attention to the air aspect in a professional and understanding way.

One for Good Measure

A League of Airmen: U.S. Air Power in the Gulf War by James A. Winnefeld, Preston Niblack, and Dana J. Johnson. Santa Monica, Calif.: RAND, 1994.

Admiral Winnefeld was a naval aviator, but none of the authors has an obvious connection with the Air Force. Their book, which analyzes the subject in relatively dispassionate terms, would be a suitable substitute for either of the first two listed above.

Notes

1. Edward J. Marolda and Robert J. Schneller Jr., *Shield and Sword: The United States Navy and the Persian Gulf War* (Washington, D.C.: Naval Historical Center, 1998).
2. Roger H. Nye, *The Challenge of Command: Reading for Military Excellence* (Wayne, N.J.: Avery, 1986).
3. Jonathan S. Landay, "Battle over the Future of America's Army," *Christian Science Monitor*, 22 June 1999, 2.
4. Bradley Graham, "Air vs. Ground: The Fight Is On," *Washington Post*, 22 June 1999, 1.
5. Gen Wesley Clark, the NATO commander for the 1999 war against Yugoslavia, reported that this can be a two-way street because the clever Serbian use of decoys on the ground caused the NATO air forces to waste some expensive PGMs against fake targets. Joseph Fitchett, "NATO Misjudged Bombing Damage," *International Herald Tribune*, 23 June 1999, 1.
6. Now that all EF-111s have been retired from the Air Force, the remaining Prowlers, located at a jointly manned unit based at Whidbey Island, Washington, perform the entire job. They helped achieve air supremacy in the attack on Kosovo, but the media reported that they were stretched thin because of their limited numbers. Guy R. Hooper, "Prowler Goes Joint," US Naval Institute *Proceedings* 122 (September 1996): 37-39; Phil Kuntz, "The Pentagon Capitalizes on Kosovo War Successes to Lobby Congress," *Wall Street Journal*, 11 June 1999, 1; and Paul Mann, "Kosovo's Lessons Called Ambiguous," *Aviation Week and Space Technology*, 28 June 1999, 32.
7. James A. Winnefeld and Dana J. Johnson, *Joint Air Operations: Pursuit of Unity in Command and Control, 1942-1991* (Annapolis: Naval Institute Press, 1993), 33. Incidentally, they do credit unity of effort as being above average in Desert Storm in the general sense.
8. The author cruised aboard the battleship *Missouri* in the summer of 1950 and participated in gunnery exercises in the lower handling room of the number-one turret. The range then and still is about 20 miles. However, the Navy is now looking toward new guns with guided projectiles and ranges of up to 63 miles, which will come on-line early in the next century. Thus, the last remaining battleships are no longer going to be maintained in a reserve status but will soon be gone for good. "Navy Will Retire Last Two Battleships by Middle of Next Decade," *Inside the Navy*, 5 July 1999, 9; on-line, Internet, 7 October 1999, available from <http://ebird.dtic.mil/Jul1999/s19990706retire.htm>.
9. The reader should not assume too much from that statement: I would be among the first to argue that studying the campaigns of Alexander the Great still has value.
10. We are indebted to Michael Howard (and more distantly to Carl von Clausewitz) for that idea, by now having become common wisdom. Michael Howard, "Military Science in an Age of Peace," Chesney Memorial Gold Medal lecture, 3 October 1973, reprinted in *Journal of the Royal United Services Institute* 119 (March 1974): 3-11.
11. Winnefeld and Johnson, 171.

*Attacking is the art of making the weight of all one's forces
successfully bear on the resistances one may meet.*

--Ferdinand Foch